Social withdrawal is present as a trait in the general population and is a common early symptom of multiple neurological diseases, including schizophrenia, Alzheimer’s disease, and major depressive disorder. However, the underlying, biological causes of social withdrawal (either as a trait or a disease state) are still poorly understood and may also differ between diseases. Within the PRISM project (www.prism-project.eu), we aim to elucidate the genetics, and as such the biological etiology, of social withdrawal within the general population as well as patients with schizophrenia, Alzheimer’s disease, and major depressive disorder. The proposed research aims to shed new light on the biological underpinnings of social withdrawal, in terms of its genetics as well as its link to cognitive function and disease. This knowledge can contribute on the longer term to the prevention, diagnosis, and treatment of social withdrawal in various brain disorders, including schizophrenia, Alzheimer’s disease, and major depressive disorder. We aim to identify the genetic underpinnings of social withdrawal. We will use a hypothesis-free approach, i.e. we will conduct a genome-wide association study (GWAS) to test the association between ~13 million common single nucleotide variants (i.e. SNPs) and a 'social withdrawal score' generated from answers to the questions about participation in social activities assessed in the UK Biobank participants. In this way, we will zoom in on the genetic variants that are most strongly linked to social withdrawal, which we can use to deduce the biological processes involved in social withdrawal. Due to the expected small effect sizes of individual common genetic variants involved in social withdrawal, we would like to include the full cohort (approximately 500,000 participants), i.e. the genome-wide genotyping data of all participants that answered the questions in data-field 1031 (frequency of friend/family visits).
and/or data-field 6160 (leisure/social activities), data-field 1110 and 1120 (mobile phone use).